

Applying prevention frameworks to address heat-related illness in agricultural workers

Jen Krenz, Department of Environmental and Occupational Health Sciences, University of Washington

jkrenz@uw.edu

What are the risk factors?

Make list of risk factors, including those that are established (e.g. not drinking enough hydrating fluids) and those that may be specific to the group you are working with. Here are risk factors that we identified from our study as well as other sources:

- Avoidance of cold water when hot (Lam, 2013)
- Wearing layers of clothing to promote sweating and weight loss (Lam, 2013)
- Drinking highly caffeinated beverages at work to increase performance (Lam, 2013)
- Perception that drinking water next to the toilet is contaminated (Lam, 2013)
- Paid piece rate (Blank, 2014; Spector, manuscript in preparation)
- Toilet located far away (Spector, manuscript in preparation)
- No acclimatization period (MMWR, 2014)
- Poor knowledge of HRI regardless of training requirements (Bethel, 2014; Stoecklin-Maoris, 2013)

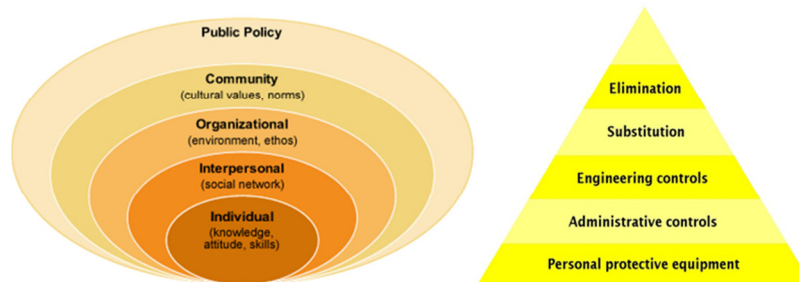
What are the solutions?

Select a risk factor and define the broad solution that addresses the risk factor and leads to prevention. For example, if the risk factor is lack of acclimatization, the solution would be that workers are adequately acclimatized.

What are appropriate strategies for prevention?

We will discuss two frameworks that may be appropriate for developing prevention strategies to achieve solutions. For example, if the solution is making sure workers are acclimatized, what are the specific strategies and where do they fit within these frameworks?

- *Socio-ecological models* (McLeroy, 1988) assume change is needed at multiple levels within and beyond the workplace:
 - Intrapersonal→Characteristics of the individual such as knowledge, attitudes, behavior
 - Interpersonal→Formal and informal social network and social support systems
 - Institutional/organizational→Social institutions and rules and regulations for operation; workplace
 - Community/society→Relationships among organizations, institutions, and informal networks
 - Public policy→Local, state, and national laws and policies
- *Industrial hygiene hierarchy of controls* focuses on workplace strategies:
 - Elimination→Can the hazard be eliminated?
 - Substitution→ Is there a safer substitute for the hazard?
 - Engineering controls→Can the hazard or exposure be reduced through engineering?
 - Administrative controls→Can changing company policies reduce exposures?
 - Personal protective equipment→Is there PPE available to reduce exposures?



Who are the stakeholders? Who will implement the strategy, whose support is needed, are others involved peripherally?

What is the approach? What needs to be done specifically to implement the strategy?

What materials are needed? Educational materials, space for workshops, PPE

Risk factor:				
Solution:				
	Strategy	Stakeholders	Approach	Materials
<i>Socio-ecological model</i>	Intrapersonal			
	Interpersonal			
	Institutional/Organizational			
	Community/Society			
	Public Policy			
<i>IH principles</i>	Elimination			
	Substitution			
	Engineering controls			
	Administrative controls			
	PPE			